Name:

# Lesson 2 – Biodiversity **What Does Wildfire Resilience Look Like?**

Date:

Science Period:

## Challenge 1

What would happen around Emberville if there was no fire? The graph below shows the current plant populations around Emberville. On the graph below, draw what these plant populations will look like in 50 years, 2070, if there was no wildfire. You can draw lines between 2022 and 2070 if that is helpful, but your answers in the 2070 box are the most important.

Figure 1. Complete this graph of the percent cover of different plants around Emberville showing what would happen if there was no wildfire.

## Challenge 1 - Continued

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| Describe the main patterns you drew on this graph. |
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| What would happen if there was a wildfire in this area in 2070? (one or two sentences) |
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## Challenge 2

How might frequent fire impact plant populations and biodiversity around Emberville? Use time series graphs 1-4 to answer the following questions.

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| In time series 2, what are the main patterns or changes from 1985 to 2020? |
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| In time series 3, what are the main changes in plant populations after the 2001 wildfire? |
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| In time series 4, which plant populations increase the most, decrease the most, or stay the same? |
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| How does frequent wildfire impact the biodiversity of plants in Nevada? Reference time series 4 and the plant readings from Lesson 1. |
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## Challenge 3

In a sagebrush ecosystem in Nevada, what kind of wildfire might increase biodiversity? Use what you have learned about wildfire and plant populations today and during earlier wildfire lessons to answer the following questions.

There are three main components of biodiversity to consider in this activity.

* Areas with high plant biodiversity have:
  + Many different types of plants
  + Plants of the same type but of many different ages
  + Patchy or “heterogenous” distribution of plants

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| Describe how wildfire could increase biodiversity. Include specific plant populations and the size, frequency, or severity of wildfire. |
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| Describe how wildfire could decrease biodiversity. Include specific plant populations and the size, frequency, or severity of wildfire. |
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| Describe one way humans could increase biodiversity around Emberville. |
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